RADWIN

June 10, 2019

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: **Comments –** RM-11840, ET Docket No. 14-165, Petition for Rulemaking of Microsoft Corporation ("Microsoft")

Dear Ms. Dortch:

RADWIN LTD. ("RADWIN") submits these comments in response to the Petition for Rulemaking submitted by Microsoft that asks the Commission to modify the rules governing white space devices.[1] White space devices represent an exciting opportunity through which the Commission can enable greater Internet access for more Americans, particularly those in rural and underserved areas. RADWIN therefore generally supports the proposed rule changes and urges the Commission to initiate a Notice of Proposed Rulemaking ("NPRM") that may lead to the modification of the white space device rules.

As the Commission is aware, RADWIN is a leading provider of sub-6 GHz wireless broadband solutions, providing backhaul and fixed access solutions to major carriers in the United States and worldwide. RADWIN presently has more than 1,000,000 deployments in more than 150 countries. RADWIN continues to develop means by which more customers – both businesses and individuals – can be better and more efficiently served. Providing wireless solutions that enable broadband services to underserved subscribers in rural communities is a major area of focus and a significant part of RADWIN's mission. That is why it submitted a Petition for Rulemaking that would facilitate the provision of improved broadband services using 5 GHz unlicensed spectrum.[2]

The white space spectrum offers favorable propagation characteristics that other bands do not – overcoming terrain and vegetation obstacles, which means it can transmit further and reach more remote areas, allowing it to play a key role in provisioning broadband services to remote communities. That is why RADWIN supports Microsoft's initiative to enable further utilization of the white space spectrum for rural connectivity. Microsoft's Petition proposes rules that are generally intended to enable and further enhance the ability to provide broadband services to rural communities by permitting: fixed white space devices to operate at higher power in the second adjacent channel to broadcasters in less congested areas; fixed white space devices to operate with higher

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[1] *Amendment of Part 15 of the Commission's Rules for Unlicensed Operations in the Television Bands, Repurposed 600 MHz Band, 600 MHz Guard Bands and Duplex Gap, and Channel 37,* Petition for Rulemaking, ET Docket No. 14-165, RM-11840 (filed May 3, 2019) ("*Microsoft Petition*"); *Consumer & Governmental Affairs Bureau Reference Information Center, Petition for Rulemakings Filed*, Public Notice, Report No. 3127, RM-11840 (rel. May 9, 2019).

[2] *Amendment of Part 15 of the Commission's Rules to Advance Improved Broadband Services in the U-NII-1 and U-NII-3 Bands*, Petition for Rulemaking, RM-11812 (filed June 18, 2018).

power on the first-adjacent channel in certain areas; and fixed white space devices to operate at greater heights above average terrain in certain cases.

The Commission last fully reviewed its white space device rules approximately five years ago.[3] Since then, much has changed, including the broadcast incentive auction and, as Microsoft notes, the development of spectrum access systems.[4] Unfortunately, what has not changed is the need to close the digital divide, particularly in rural areas.[5] The changes to the rules that Microsoft proposes will help that effort while still protecting incumbent services. Fixed wireless broadband remains a cost-effective way to reach unserved areas, avoiding the costs and other hurdles of laying fiber, for example. That is why RADWIN remains committed to this market segment, by developing advanced fixed wireless access solutions in the white space spectrum and by offering connectivity solutions utilizing, among others, unlicensed 5 GHz spectrum.

Microsoft also proposes to allow white space devices to operate over a moveable platform using free white space channels available across a geofenced area. RADWIN supports this proposal and suggests that the capability be defined so as to facilitate the use of white space devices to provide broadband connectivity to commuters over trains and buses, traveling in a pre-determined route. RADWIN encourages the Commission to consider rules that would allow a method to define such pre-defined route as a geofenced area, where white space channels are available. That route can be roads or train tracks, long or short, where the list of white space channels available along the route would be planned ahead yet verified constantly with the white space device database for the coordinates of that route.

Microsoft also proposes that the Commission modify the white space device rules to better facilitate the provision of service to the Internet of Things ("IoT") over narrowband channels. RADWIN supports the initiative to enable the white space spectrum for narrowband applications. However, RADWIN expects white space devices to play a key role in providing broadband services to rural and underserved areas. Therefore, the Commission must ensure there is a spectrum management mechanism that would provide coordination between broadband and narrowband white space operations, so that narrowband channels would not be spread randomly through available white space spectrum. Without such a mechanism, there may not be sufficient space between

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[3] *Amendment of Part 15 of the Commission's Rules for Unlicensed Operations in the Television Bands, Repurposed 600 MHz Band, 600 MHz Guard Bands and Duplex Gap, and Channel 37 et al*., Notice of Proposed Rulemaking, 29 FCC Rcd 12248 (2014).

[4] *See Microsoft Petition* at 3 ("The 2014 Notice of Proposed Rulemaking . . . in this proceeding focused primarily on changes needed to ensure a smooth incentive auction. The auction closed in April 2017, two years ago. The time is now right to address a limited number of refinements to the rules to promote further rural deployment."); *id.* at 18 (suggesting that the Commission define a "narrowband White Space device" as a fixed or personal/portable white space device operating in a bandwidth of no greater than 100 kHz that incorporate a listen-before-talk spectrum access mechanism).

[5] *See, e.g.*, *Bridging The Digital Divide For All Americans*, FCC, https://www.fcc.gov/about-fcc/fcc-initiatives/bridging-digital-divide-all-americans (last visited June 10, 2019) ("[T]here are too many parts of this country where broadband is unavailable. In urban areas, 97% of Americans have access to high-speed fixed service. In rural areas, that number falls to 65%. And on Tribal lands, barely 60% have access. All told, nearly 30 million Americans cannot reap the benefits of the digital age.").

narrowband sub-channels for broadband operations that require full 6 megahertz-wide channels and, optimally, multiple contiguous channels. While the provision of IoT services will satisfy important connectivity requirements, the Commission should first ensure that spectrum used for white space devices can be effectively used for broadband services.

RADWIN appreciates the opportunity to submit these comments. Microsoft has proposed changes to the rules governing white space devices that will make the available white space spectrum an even better tool for serving rural and underserved areas. RADWIN therefore urges the Commission to adopt an NPRM to further evaluate Microsoft's proposals. Please contact the undersigned with any questions.

Respectfully submitted,

/s/ Adi Nativ

Adi Nativ
Vice President, Global Business Development
Email: adi_nativ@radwin.com
Tel: +1-201-749-9637

cc: (each by first class mail)
Paula Boyd
Michael Daum
Paul Margie
Paul Caritj
Robert M. McDowell